

Field Modification Form
Lower Passaic River Restoration Project
Remedial Investigation
Project No: 60145884



Field Modification Number: FM-130522-1
Document (plan or SOP title and date) <i>Quality Assurance Project Plan. Low Resolution Coring Supplemental Sampling Program. Lower Passaic River Restoration Project. June 2012, Revision 3</i>
Activity: Perform probing to determine sediment surface condition, presence/absence of sediment, sediment thickness, and general nature of sediment, when present, at select areas within the Lower Passaic River Study Area (LPRSA).
<p>Proposed Modification:</p> <p>The Quality Assurance Project Plan (QAPP) (AECOM, 2012) is modified by this Field Modification (FM) to include the performance of sediment probing in select areas within the LPRSA. This probing activity is being conducted to provide information on the sediment surface (e.g., armored, hard bottom, sediment), the presence/absence of sediment, the sediment thickness, and the general nature of the sediment (e.g., silt or sand). An example table showing the types of data that will be collected is presented as Table 1. Probing will be conducted in seven areas within the LPRSA between River Mile (RM) 8.3 and RM 14.0. One of these areas is subdivided into seven subareas, each subarea separated by utilities. The probing areas are shown on Figure 1. The probing data will be utilized by the Cooperating Parties Group (CPG) and the United States Environmental Protection Agency (USEPA) in the design of the second phase of Low Resolution Coring (LRC) Supplemental Sediment Sampling (SSP2).</p> <p>Probing will generally be conducted within each area along an approximate grid pattern established at 200 foot spacing perpendicular to the river bank and 60 foot spacing parallel to the river bank. The approximate location of the grid pattern for all the areas is shown on Figures 2 through 6. Adjustments to these grid patterns may be made in the field to accommodate site conditions. Such changes will be discussed in the field with the USEPA oversight contractor and communicated to the CPG and USEPA at the end of each field day. Additionally, detailed utility surveys have not been performed in one of the proposed probing areas, the area between RM 13.6 and RM 14.0 shown on Figure 6. A portion of this area is identified in the National Oceanic and Atmospheric Administration (NOAA) navigational charts as having cable and pipelines. As part of the utility notification for all areas prior to conducting the probing survey, a detailed inquiry into the presence and nature of utilities will be conducted of this area.</p> <p>The probing activities conducted under this FM will not be tidal dependent. Best effort will be made to probe in shallow zones during higher tides, but probing will <u>not</u> be limited to high tide.</p> <p>Probing will be conducted in accordance with SOP-8, attached to this FM for reference. SOP-8 – Section III. 1 is modified by this FM to allow the use of a Trimble ProXH GPS data receiver (sub-foot accuracy) with Panasonic Toughbook field computer. The field computer will be pre-loaded with survey data and field personnel will navigate to the predetermined probe locations. As stated in SOP-8, the sampling vessel will be located to within 10 ft. (maximum distance) from the pre-programmed target coordinates. As stated above, adjustments to the grid patterns may be made in the field at the time of sampling to accommodate site conditions. The GPS data receiver will be located on the boat as close as possible to the point where probing is being performed. GPS data will be post-processed to achieve +/- 1-foot accuracy, as required by the LPR Navigation SOP (LPR-G02). Additionally, SOP-8 is modified by this FM to allow the use of the sampling vessel motor to keep the vessel on station and not requiring the use of an anchor.</p> <p>Sediment samples for chemical analysis will <u>not</u> be collected during this probing activity.</p> <p><i>Worksheet 9 (Project Scoping Session Participants Sheet)</i> is modified as follows:</p> <p>A call was held on May 9th to discuss SSP2 and the probing activities. In attendance were the USEPA and their subcontractors and the CPG and their subcontractors.</p>

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The results of this call are summarized in this FM.

Worksheets 10 (Problem Definition) and 11 (Project Quality Objectives/Systematic Planning Process Statements) are modified as follows:

The presence/absence and nature of sediment at select areas of the LPRSA are needed to support ongoing development of the SSP2. Sediment information will be obtained through a sediment probing program of select areas within the LPRSA. The specific objectives are defined under Proposed Modification.

Worksheet 14 (Summary of Project Tasks) is modified as described under Proposed Modification.

Worksheet 16 (Project Schedule/Timeline Table) is modified as follows:

Performance of sediment probing is scheduled for the week of June 3rd and is anticipated to require five days of field work. Collected data will be transmitted to the CPG and USEPA within one week of demobilization from the field for incorporation into the design of the SSP2 sampling program.

Worksheet 17 (Sampling Design and Rationale) is modified as follows:

Probing areas were chosen to be located in shoals where sampling had not been performed in the past. These data will be used by USEPA and the CPG to aid in the selection of sampling locations for SSP2.

Worksheet 21 (Project Sampling SOP Reference Table) is modified as follows:

SOP-8 – Section III.1 was modified by Low Resolution Coring Supplemental Sampling Program. Lower Passaic River Restoration Project QAPP Revision 3 (June 2012) to allow the use of a dGPS as a replacement for a RTK dGPS. This SOP is further modified by this FM to allow the use of a hand held dGPS as described under Proposed Modification.

Worksheet 27 (Sample Custody Requirements) is modified to include the following probing location identification procedure. Each probing location will be uniquely identified for the purpose of record keeping with seven digit ID number: 13B – PNNN. Where 13B – P represents the year (13), sampling event (B), and probe (P) and NNN represents the probing location beginning with 001.

Effective Date: May 22, 2013

Rationale: This FM provides a formal update to the Low Resolution Coring Supplemental Sampling Program QAPP to incorporate discussions from the May 9th conference call and described above.

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Date: May 22, 2013

Project QA Manager Approval: Debra L. Simmons

Date: May 22, 2013

Task Manager Approval: Douglas E. Simmons

Date: May 22, 2013

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Table 1 – Example Data Collection During 2013 Probing Activities

[illegible]

Notes: *Si = Silt, SD = Sand, GR = Gravel, CL = Clay, Ro=Rocks, F = Fine, M = Medium, C = Coarse
NAD – North America Datum 1983 RM - River Mile N/A - not applicable ft = foot NS = Not Surveyed



RIVER MILE 8.0-14.0

FIGURE 1





RIVER MILE 9.9-11.4

FIGURE 3



RIVER MILE 11.2-12.2

FIGURE 4



RIVER MILE 12.0-13.2

FIGURE 5



RIVER MILE 13.2-14.8

FIGURE 6

Title: Sediment Probing

I. Introduction

This procedure describes the equipment and methods to be used to conduct sediment probing at the Lower Passaic River Restoration Site. This procedure specifically addresses probing the sediment at each core sampling location to determine the approximate sediment thickness and general sediment type.

II. Equipment and Supplies

The following equipment will be needed to conduct sediment probing:

1. Calibrated Steel Rod to investigate the sediment type, probe the thickness of unconsolidated sediments at each core sampling location, and to determine the length of core tubing to use.
2. Personnel protective equipment (PPE) - including hard hat, steel toe boots, and disposable gloves. (refer to HASP for full PPE requirements).
3. Log sheets to record all field collected data.

III. Guidelines

1. Using the on-board RTK DGPS system, maneuver the sampling vessel to within 10 ft (maximum distance) of the pre-programmed target coordinates for each core sample location, and stabilize the vessel as much as possible.

Confirm the location by examining the site map, bathymetric survey map, and landmarks.

2. Use a calibrated steel rod to probe the sediment. The probe should be sharpened at one end, and be calibrated at specific interval (*e.g.*, 6 inches).
3. Probing should be conducted 3 to 5 feet away from the sampling location to avoid disturbance of the sediment where the sample will be collected.
4. Push the sharpened end of the probe into the river bed, taking note of the depth of penetration and the type of resistance encountered. Use both hands and hold arms close to the chest to advance the probe vigorously when determining the depth extent of the unconsolidated layer.

5. When initial probe is complete, move the probe laterally and repeat the above probing step three or more times. Maintain the minimum three foot distance from the sampling location.
6. Record the average sediment thickness encountered (to the nearest 6 inches) and estimated sediment type (see guidance below) in the field log and the field application.
 - A. Bedrock refusal will have a distinctive clink and there will be no penetration.
 - B. Gravel or cobbles on top of the bedrock surface will produce multiple clinkings and the probe strikes the larger rock particles.
 - C. Sandy material will have a gritty or granular feel and will make a muted, raspy sound as the probe penetrates. There will generally be some resistance to probing, and that will increase with the depth of penetration.
 - D. Silty material will be smoother and will probably allow the greatest penetration. The probe will smoothly move through silts and will make little or no sound.
 - E. Clay will allow for a smooth penetration, but will be stickier than silt and will not allow as much penetration.
 - F. Sometimes finer materials will adhere to the probing rod and will allow for verification by pulling the rod out of the water.
7. If the probing results are inconsistent between the three locations, record the estimated sediment type as that which is the most representative of the three probes, and note the inconsistency in the field log and the field application.

IV. Reference

Memo: Sediment Probing Oversight Guidelines; Hudson River PCBs Superfund Site.
Dave Scheuing, TAMS. September 2004.